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EXAMINER

EDWARDS, LAURA ESTELLE

ART UNIT	PAPER NUMBER
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1734

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Please find below and/or attached an Office communication concerning this application or proceeding.

T.D. 2

Office Action Summary	Application No. 09/844,030	Applicant(s) BOBROV, YURI A.	
	Examiner Laura Edwards	Art Unit 1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17, 30-32 and 40-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17, 30-32 and 40-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-3, 5, 7, 9, 11, 12, 14-17, and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bobrov et al ("Novel Dichroic Polarizing Materials and Approaches to Large-Area Processing") in view of Ardley et al (US 4,797,301).

Bobrov et al teach apparatus for forming polarizers via use of conventional coating apparatus including a moveable doctor blade, a rotatable roller or cylinder, or die head for deposition and simultaneous orientation of the lyotropic liquid crystal (LLC) on a moveably mounted or stationary substrate via shearing force (see entire document). Bobrov et al are silent concerning the coating apparatus including a combined movable applying and orienting system wherein the orienting system comprises at least one plate that is fixed on one end such that part of the plate's surface is unrestricted providing the orienting force on the LLC. However, it was known in the coating art, at the time the invention was made to provide in a single moveable

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coating system (see col. 2, lines 42-48 and col. 4, lines 1-21), a die head in combination with a flap device (i.e., plate) having a fixed end in order to apply and distribute coating material onto a moving substrate as evidenced by Ardley et al (see col. 4, lines 27-41). In view of the teachings or Bobrov et al and Ardley et al, it would have been obvious to one of ordinary skill in the art to utilize a conventional coating system including the combined movable applicator/flap device as taught by Ardley to apply LLC on the substrate so as to provide for deposition and simultaneous orientation of the LLC on the substrate.

With respect to claim 2, Ardley et al recognize feeding coating material to the die head via a pump (24).

With respect to claim 3, the pump fed coating system taught by Ardley et al constitutes at least one injector.

With respect to claim 5, Ardley et al recognize metered flow of the coating material from the die head in col. 2, lines 57-59.

With respect to claim 7, Ardley et al provide a flap which equates to the doctor blade.

With respect to claims 9 and 11, see Ardley et al col. 3, lines 53-56 for material from which to make the flap.

With respect to claims 12 and 17, Ardley et al recognize that the system is moved relative to the substrate via a control device (see col. 2, lines 45-51).

With respect to claims 14, 31, and 32, Ardley et al teach a coating system using a fixed steel bar (17) or weight to press the flap on the substrate.

With respect to claim 15, see Ardley et al, Fig. 3 with a rectangular shaped flap.

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With respect to claim 16, the fixed steel bar (17) of Ardley et al would function to minimize vibration as it acts as a weight to press the flap on the substrate.

Claims 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bobrov et al ("Novel Dichroic Polarizing Materials and Approaches to Large-Area Processing") and Ardley et al (US 4,797,301) as applied to claims 1-3, 5, 7, 9, 11, 12, 14-17, and 30-32 above, and further in view of Fenoglio et al (US 5,755,881).

The teachings of Bobrov et al and Ardley et al have been mentioned above. Bobrov et al further recognize that after an aqueous based LLC composition is deposited and oriented on the substrate that solvent is removed (see bottom of page 225 to first line of page 226) but Bobrov et al and Ardley et al do not teach or suggest a solvent feed system and solvent removal system. However, it was known in the coating art, at the time the invention was made, to provide a solvent feed and solvent removal station downstream of a coating die head via providing a pivotably mounted solvent supply/vacuum nozzle to remove solvent to prevent drying of the coating or spoilage of the substrate during maintenance or start-up of the equipment as evidenced by Fenoglio et al (see col. 7, lines 35-40). It would have been obvious to one of ordinary skill in the art to provide the solvent supply/removal system as taught by Fenoglio et al in the apparatus defined by the combination of above in order to prevent premature drying of the coated substrate or spoilage of the substrate during maintenance or start-up.

Claims 43-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bobrov et al ("Novel Dichroic Polarizing Materials and Approaches to Large-Area Processing"), Ardley et

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al (US 4,797,301), and Fenoglio et al (US 5,755,881) as applied to claim 40-42 above, and further in view of Doan (US 6,793,764).

The teachings of Bobrov et al, Ardley et al, and Fenoglio et al have been mentioned above none teach or suggest a solvent feed system moveable relative to the solvent removal system. However, it was known in the art, at the time the invention was made, to provide a solvent feed system moveable relative to the solvent removal system so as to control solvent splashing on the surface of the substrate as evidenced by Doan (see col. 2, lines 61 to col. 3, lines 1-4). It would have been obvious to one of ordinary skill in the art to provide a solvent feed/solvent removing system with parts moveable relative to one another as taught by Doan in the apparatus defined by the combination above in order to prevent solvent splashing on the substrate.

Claims 1-7, 9, 11-17, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bobrov et al ("Novel Dichroic Polarizing Materials and Approaches to Large-Area Processing") in view of Hughes (US 6,471,776).

Bobrov et al teach apparatus for forming polarizers via use of conventional coating apparatus including a moveable doctor blade, a rotatable roller or cylinder, or die head for deposition and simultaneous orientation of the lyotropic liquid crystal (LLC) on a moveably mounted or stationary substrate via shearing force (see entire document). Bobrov et al are silent concerning the coating apparatus including a combined movable applying and orienting system wherein the orienting system comprises at least one plate that is fixed on one end such that part of the plate's surface is unrestricted providing the orienting force on the LLC. However, it was

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known in the coating art, at the time the invention was made to provide in a single moveable carriage coating system (see col. 2, lines 7-23), a die head applicator (24) in combination with a metering roller (46) and a flap type doctor device (i.e., plate 26) having a fixed end in order to uniformly apply coating material onto a supported substrate as evidenced by Hughes (see Fig. 1). In view of the teachings of Bobrov et al and Hughes, it would have been obvious to one of ordinary skill in the art to utilize the conventional coating system including the combined carriage driven applicator/metering roll/flap system as taught by Hughes to apply LLC on the substrate so as to provide for uniform coating on a substrate.

With respect to claim 2, 3, and 5, Hughes provide a die head adjacent the doctor device (26) between which a desired amount of coating material is fed onto the substrate (see col. 3, lines 11-20)

With respect to claims 4 and 6, Hughes provides at least one metering roller (46).

With respect to claim 7, see doctor blade (26).

With respect to claims 9 and 11, even though Hughes is silent concerning material used to make the plate. It would have been obvious to one of ordinary skill in the art at the time the invention was made, to make the blade plate from polymer, rubber, etc. since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. Furthermore, it is within the purview of one skilled in the art to utilize an appropriate material from which to make the blade so as to have desired properties in accordance with the coating material and substrate being treated so as to prevent any negative effects on the final product.

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With respect to claim 12, Hughes provides shims for vertically moving the at least one system as evidenced by col. 3, lines 44-50.

With respect to claim 13, Hughes provides a coating system horizontally movable via the carriage.

With respect to claim 14, although the neither Bobrov et al nor Hughes provide a fixed roller, the use of a fixed roller would have been expected in instances where a laminate or protective layer was not required to form the final coated product. The use of a fixed roller in the coating system as defined by the combination above would still enable metering of the coated substrate due to movement of the carriage along the surface of the substrate.

With respect to claim 15, the plate (26) as used by Hughes from a side view as shown in Fig. 1 appears to be rectangular in shape.

With respect to claim 16, Hughes recognizes the blade (26) being attached at an opposite end to an air cylinder (36) such that the air cylinder would provide stability of the blade so as to minimize vibration.

With respect to claim 17, Hughes recognizes some type of control system as evidenced by col. 3, lines 21-23.

With respect to claim 30, the plate (26) is fastened to an air cylinder (36), arm (34), and finally to the applicator (24).

Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bobrov et al ("Novel Dichroic Polarizing Materials and Approaches to Large-Area Processing") and

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Hughes (US 4,056,423) as applied to claims 1-7, 9, 11-17, and 30 above, and further in view of Shelanski et al (US 3,235,631).

The teachings of Bobrov et al and Hughes have been mentioned above but Bobrov et al and Hughes do not teach or suggest an application roller with a relief pattern. However, it was known in polarizer manufacturing art, at the time the invention was made, to provide a patterned relief roller in combination with a die head so as to supply the coating material in a pattern on the substrate as evidenced by Shelanski et al (see col. 3, lines 37-40). It would have been obvious to one of ordinary skill in the art to provide a die head in direct contact with a patterned roller to apply a coating pattern on the substrate as taught by Shelanski et al in the apparatus defined by the combination above in order to provide a relief pattern on the surface of the substrate when forming the polarizer.

With respect to claim 10, it is within the purview of one skilled in the art to provide the desired relief pattern on the flap or plate downstream of the patterned application roller so as to continue the pattern on the substrate downstream of the application roller.

Claims 40-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bobrov et al ("Novel Dichroic Polarizing Materials and Approaches to Large-Area Processing") and Hughes (US 4,056,423) as applied to claims 1-7, 9, 11-17, and 30 above, and further in view of Fenoglio et al (US 5,755,881).

The teachings of Bobrov et al and Hughes have been mentioned above. Bobrov et al further recognize that after an aqueous based LLC composition is deposited and oriented on the substrate that solvent is removed (see bottom of page 225 to first line of page 226) but Bobrov et

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al and Hughes do not teach or suggest a solvent feed system and solvent removal system. However, it was known in the coating art, at the time the invention was made, to provide a solvent feed and solvent removal station downstream of a coating die head via providing a pivotably mounted solvent supply/vacuum nozzle to remove solvent to prevent drying of the coating or spoilage of the substrate during maintenance or start-up of the equipment as evidenced by Fenoglio et al (see col. 7, lines 35-40). It would have been obvious to one of ordinary skill in the art to provide the solvent supply/removal system as taught by Fenoglio et al in the apparatus defined by the combination of above in order to prevent premature drying of the coated substrate or spoilage of the substrate during maintenance or start-up.

Claims 43-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bobrov et al ("Novel Dichroic Polarizing Materials and Approaches to Large-Area Processing"), Hughes (US 4,056,423), and Fenoglio et al (US 5,755,881) as applied to claim 40-42 above, and further in view of Doan (US 6,793,764).

The teachings of Bobrov et al, Hughes, and Fenoglio et al have been mentioned above none teach or suggest a solvent feed system moveable relative to the solvent removal system. However, it was known in the art, at the time the invention was made, to provide a solvent feed system moveable relative to the solvent removal system so as to control solvent splashing on the surface of the substrate as evidenced by Doan (see col. 2, lines 61 to col. 3, lines 1-4). It would have been obvious to one of ordinary skill in the art to provide a solvent feed/solvent removing system with parts moveable relative to one another as taught by Doan in the apparatus defined by the combination above in order to prevent solvent splashing on the substrate.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following patent establishes that polarizing film products are laminates: Delangre et al (US 3,015,989).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura Edwards whose telephone number is (571) 272-1227. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on (571) 272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Laura Edwards
Primary Examiner
Art Unit 1734

Le
September 8, 2005